

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Invertebrate Abstract**

**Element Code:** IMGASC9200

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Sonorella dalli* Bartsch, 1904

**COMMON NAME:** Garden Canyon talussnail

**SYNONYMS:**

**FAMILY:** Helminthoglyptidae

**AUTHOR, PLACE OF PUBLICATION:** Bartsch, 1904, *Smithson. Misc. Coll.* 47 (for 1905) (2) No. 1481:187-200; Pls. 27-33.

**TYPE LOCALITY:** "Tanner's Canyon, Huachuca Mts., Arizona, USA." Collected by J.H. Ferriss, however date and elevation not given (FMNH 60519). Bequaert and Miller (1973) report that Tanner Canyon is now called Garden Canyon.

**TYPE SPECIMEN:** HT: NMNH 130009 (ANSP 89228 date cataloged 23 Mar 1905). E.A. Mearns, date collected not given; 1 dry specimen.

**TAXONOMIC UNIQUENESS:** Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three common with Sonora), 3 in New Mexico, 1 in trans-Pecos Texas (in common with New Mexico), 8 in Sonora (3 in common with Arizona), and 3 in Chihuahua. *Sonorella dalli* is 1 of 23 species in the *S. granulatissima* Complex.

**DESCRIPTION:** Snails in the genus *Sonorella* have a "depressed globose, helicoids shell, 12 to 30 mm in diameter, umbilicate or perforate, with a wide, unobstructed mouth and a thin, barely expanded peristome, smoothish or slightly sculptured with growth-lines, occasionally with fine oblique or spiral granulation and short hairs (mainly on the early whorls), lightly colored, and normally with a dark peripheral band. Its most characteristic features are, however, in the genitalia, which lack a dart sac and mucus glands." (Bequaert and Miller, 1973). For species in the *S. granulatissima* Complex: The verge of the penis is usually stout and truncate, reaching extremes of diminution in some species or gigantism in others. Snails in the complex have minutely granulose or wrinkly-granulose shells, with a readily peeling periostracum; mostly without apical spirally descending threads. (Bequaert and Miller, 1973).

**AIDS TO IDENTIFICATION:** The most characteristic features of the genus *Sonorella* are, in the genitalia, which lack a dart sac and mucus glands (Bequaert and Miller 1972).

**ILLUSTRATIONS:**

**TOTAL RANGE:** Endemic the Huachuca Mountains in predominately Garden Canyon which the common name implies, but also found in Blacktail (SBMNH 77873 & 77887) and Huachuca canyons (SBMNH 77752). There is also one report from Carr Peak to the south by F. Werner (date unknown – MCZ 242715), but I.D. is questionable.

**RANGE WITHIN ARIZONA:** See “Total Range.”

### **SPECIES BIOLOGY AND POPULATION TRENDS**

**BIOLOGY:** Terrestrial gastropods do not move much, usually only to find food or reproduce. Olfaction is the primary sensory behavior utilized to find and move toward a food item (on the scale of centimeters to meters). A moving terrestrial gastropod lays down water-laden mucus on which it moves exposing its integument to a potentially drying atmosphere, and increasing its water losses through the pallial cavity because of the necessity for gas exchange. A roosting terrestrial gastropod deploys a variety of passive mechanisms for water conservation, including the direct protection of its wet surfaces from drying conditions, avoidance of temperature extremes, the creation of more favorable microclimates and decreases in gas exchange. (A. Cook, *in* Barker 2001).

### **REPRODUCTION:**

**FOOD HABITS:** Probably omnivorous, feeding on plant material (including algae, mosses, lichens, and possibly roots, shoots, leaves, flowers, anthers, pollen, fruit, seeds and rotting wood), and microorganisms associated with live and decaying vegetation; followed to a lesser extent by fungi and soil. (Speiser, *in* Barker, 2001).

**HABITAT:** Based on collections reported in SBMNH (see References), they have been collected in rockslides or limestone rockslides in canyons, at the base of a limestone ridge outcrop, along bank of creek in canyon and in creek bed.

**ELEVATION:** 5,200 – 6,200 ft (1585-1890 m). Bequaert and Miller (1973) reported elevation from 5,600 – 6,000 feet (1708-1830 m).

### **PLANT COMMUNITY:**

**POPULATION TRENDS:** Unknown.

### **SPECIES PROTECTION AND CONSERVATION**

<b>ENDANGERED SPECIES ACT STATUS:</b>	None
<b>STATE STATUS:</b>	None
<b>OTHER STATUS:</b>	None

**MANAGEMENT FACTORS:** Threats include destruction or disturbance of talus slopes.

**PROTECTIVE MEASURES TAKEN:**

**SUGGESTED PROJECTS:** Validity of the informal *Sonorella* “species-groups” (or “complexes”) has been brought into question by Naranjo-García (1988) and Roth (1996). Further research, including the use of molecular techniques, is needed to help clarify the relationships of these informal taxa. (Gilbertson and Radke 2005).

**LAND MANAGEMENT/OWNERSHIP:** DOD – Fort Huachuca Military Reservation.

## **SOURCES OF FURTHER INFORMATION**

### **REFERENCES:**

- Bequaert, J.C., and W.B. Miller. 1973. The Mollusks of the Arid Southwest. The University of Arizona Press. Tucson, Arizona. Pp. 111, 121.
- [Http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html](http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html). Fact-sheet: Talussnail, *Sonorella*. Accessed: 11/23/2005.
- Integrated Taxonomic Information System (ITIS). Retrieved 3/12/2008 from ITIS, <http://www.itis.usda.gov>.
- MCZ Malacology Collection. Accessed: 3/12/2008. <http://collections.oeb.harvard.edu/Mollusks/MolluskDetail.cfm>.
- NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: March 12, 2008).
- Santa Barbara Museum of Natural History. SBMNH: Invertebrate Zoology Online Database Collection. <http://www.sbcollections.org/iz/recordview.php>. Accessed: 3/12/2008.
- Smithsonian National Museum of Natural History. NMNH Department of Invertebrate Zoology Collections. Accessed: 3/12/2008. <http://acsmith.si.edu/emuwebizweb/pages/nmnh/iz/Display.php>.
- The Academy of Natural Sciences. ANSP Malacology Search Details. Accessed: 12 March 2008. <http://clade.ansp.org/malacology/collections/index.php>.
- The Field Museum. 2007. Department of Zoology Invertebrates Collections. Accessed 3/12/2008. <http://emuweb.fieldmuseum.org/iz/MolluscDisplay.php>.

### **MAJOR KNOWLEDGEABLE INDIVIDUALS:**

### **ADDITIONAL INFORMATION:**

The genus *Sonorella* occurs over most of Arizona (except a strip north of the Grand Canyon, an extensive northeast corner, and the small southwest *Eremarionta* area), the southwest corner of New Mexico, trans-Pecos Texas, northeast Sonora, and the northwest corner of Chihuahua, Mexico. (Bequaert and Miller, 1973).

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